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ITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 806

Joint Contribution from the Bureau of Plant Industry, WM. A. TAYLOR, Chief and the Bureau of Crop Estimates, L. M. ESTABROOK, Chief

Washington, D. C. December 8, 1919

PEACHES: PRODUCTION ESTIMATES AND IMPORTANT COMMERCIAL DISTRICTS AND VARIETIES

By

H. P. GOULD, Bureau of Plant Industry, and
FRANK ANDREWS, Bureau of Crop Estimates

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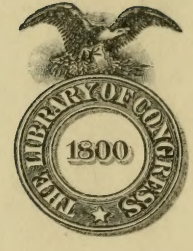

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PEACHES: PRODUCTION ESTIMATES AND IMPORTANT COMMERCIAL DISTRICTS AND VARIETIES.

By H. P. GOULD, *Bureau of Plant Industry*, and FRANK ANDREWS, *Bureau of Crop Estimates.*

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RELATIVE IMPORTANCE AND EXTENT OF THE PEACH INDUSTRY.

The peach, though far below the apple,[1] which greatly exceeds any other fruit in both acreage and crop value, is second with respect to these two standards of comparison. This is shown clearly in figure 1, which is based on the Thirteenth Census. While the last decade has witnessed some changes, it is doubtful whether those changes have affected materially the relative positions of the more important fruits. Nectarines are grouped with peaches in figure 1, but the total production of nectarines is so small as to be a negligible factor.

The geographical distribution of peach trees is shown in figures 2 and 3, both of which are based on the Thirteenth Census. The census

[1] See Gould, H. P., and Andrews, Frank, "Apples: Production Estimates and Important Commercial Districts and Varieties," Bul. 485, Dept. of Agr. 48 pp., 16 figs. 1917. This bulletin is obtained only from the Superintendent of Documents, Government Printing Office, at a cost of 10 cents.

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data, which show the distribution on a tree basis, are reduced in these maps to an acre basis for convenience of expression. As in figure 1, nectarines, which are grouped with peaches, are of such small importance as to be without substantial effect on the peach data.

ESTIMATED PRODUCTION OF PEACHES.

The estimates of the annual production of peaches for the years 1900 to 1919, inclusive, appear in Table I.

The estimates for the years 1900 to 1908 are based on the census report for the crop of 1899, while for the years 1910 to 1919, inclusive, they are based on the census figures for the crop of 1909.

The variation in the size of the peach crop from year to year is shown in figure 4. While all census data as well as estimates based

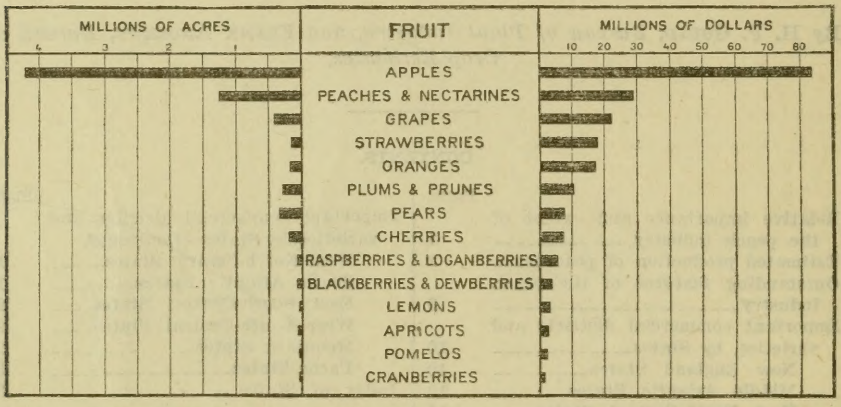

FIG. 1.—Diagram showing the relative importance, acreage, and crop values of the principal fruits of the United States for the year 1909, based on the report of the Thirteenth Census. (From the Yearbook of the Department of Agriculture for 1915.)

on those data are expressed in terms of the total crop, including both home consumption and the commercial crop, the annual variation indicated suggests also the fluctuating character of that portion of the crop which enters into commerce.

Climatic conditions doubtless are the most potent causes of large annual variation in the size of the crop. Most important of these are adverse winter temperatures and the occurrence of spring frosts during the blossoming period. In addition, warm periods during the winter often cause the fruit buds to start enough to become tender. In this condition they are likely to be killed later, even by temperatures that are not unseasonable. On the other hand, the effect of a frost during the blossoming period is not always in proportion to its severity, but depends to some extent upon the strength and vigor of the blossoms themselves.

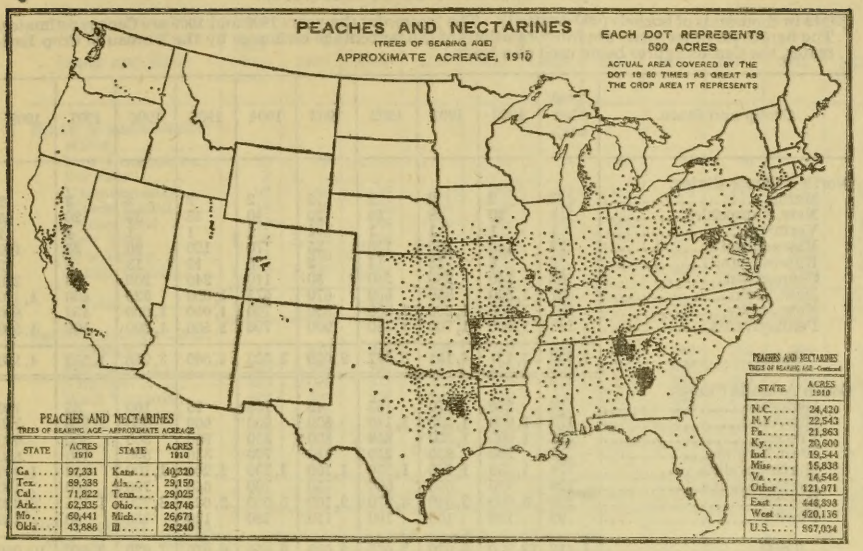
PEACHES AND NECTARINES
(TREES OF BEARING AGE)
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 60 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
PEACHES AND NECTARINES
TREES OF BEARING AGE—APPROXIMATE ACREAGE
STATE | ACRES 1910 | STATE | ACRES 1910
Ga..... 97,331 | Kans.... 40,320
Tex..... 89,338 | Ala..... 29,150
Cal..... 71,822 | Tenn.... 29,025
Ark..... 62,935 | Ohio.... 28,746
Mo..... 60,441 | Mich.... 26,671
Okla.... 43,886 | Ill..... 26,240
PEACHES AND NECTARINES
TREES OF BEARING AGE—Continued
STATE | ACRES 1910
N.C..... 24,420
N.Y..... 22,543
Pa..... 21,863
Ky..... 20,600
Ind..... 19,544
Miss..... 15,838
Va..... 14,548
Other.... 121,971
East..... 446,898
West..... 420,136
U.S..... 867,034

FIG. 2.—Map of the United States, showing the distribution and approximate acreage of peach trees of bearing age, based on the Thirteenth Census. Each dot represents 500 acres. The solid black areas indicate relatively great density of planting. (From the Yearbook of the Department of Agriculture for 1915.)

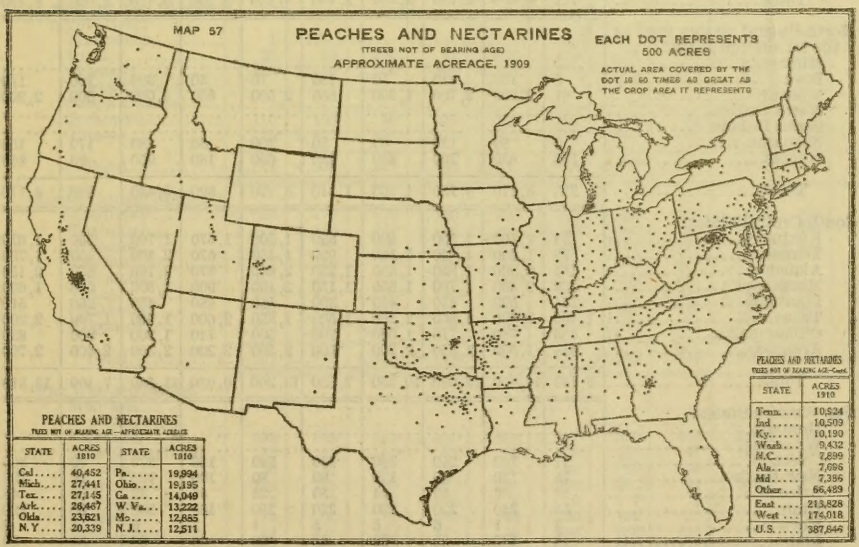
MAP 57
PEACHES AND NECTARINES
(TREES NOT OF BEARING AGE)
APPROXIMATE ACREAGE, 1909
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 60 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
PEACHES AND NECTARINES
TREES NOT OF BEARING AGE—APPROXIMATE ACREAGE
STATE | ACRES 1910 | STATE | ACRES 1910
Cal..... 40,452 | Pa..... 19,994
Mich.... 27,441 | Ohio.... 18,195
Tex..... 27,145 | Ga..... 14,049
Ark..... 26,467 | W.Va... 13,222
Okla.... 23,821 | Mo..... 12,885
N.Y..... 20,339 | N.J..... 12,511
PEACHES AND NECTARINES
TREES NOT OF BEARING AGE—Cont.
STATE | ACRES 1910
Tenn.... 10,524
Ind..... 10,509
Ky..... 10,190
Wash.... 9,432
N.C..... 7,699
Ala..... 7,696
Md..... 7,386
Other.... 66,489
East..... 213,828
West..... 176,018
U.S..... 387,846

FIG. 3.—Map of the United States, showing the distribution and approximate acreage of peach trees of nonbearing age, based on the Thirteenth Census. Each dot represents 500 acres. (From the Yearbook of the Department of Agriculture for 1915.)

TABLE I.—*Estimated production of peaches in the United States for the 21-year period, 1899 to 1919, inclusive.*

[Data in thousands of bushels (000 omitted). The figures for the years 1899 and 1909 are Census estimates. The figures for other years are interpretations of the percentage estimates by the Bureau of Crop Estimates, the Census figures being used as a basis.]

Group and State.	1899 (Census).	1900	1901	1902	1903	1904	1905	1906	1907	1908
North Atlantic States:										
Maine	2	2	2	2	2	2	2	2	2	2
New Hampshire	6	30	8	50	20	40	35	30	20	45
Vermont	1	1	1	1	1	1	1	1	1	1
Massachusetts	28	140	100	150	35	70	120	90	25	100
Rhode Island	6	8	13	14	2	5	12	13	5	12
Connecticut	62	140	280	230	50	110	240	200	50	220
New York	467	1,500	850	550	670	675	1,650	920	400	1,470
New Jersey	621	1,900	1,200	1,300	350	700	1,000	1,000	450	800
Pennsylvania	143	1,400	1,700	1,350	900	700	1,500	1,000	600	1,500
Total	1,336	5,121	4,154	3,647	2,030	2,303	4,560	3,256	1,553	4,150
South Atlantic States:										
Delaware	10	250	170	185	45	135	15	100	35	100
Maryland	172	1,900	1,300	1,140	600	950	600	850	250	750
Virginia	357	1,900	1,350	850	800	850	950	800	300	900
West Virginia	18	700	800	250	180	700	330	500	150	650
North Carolina	374	1,550	1,150	1,050	1,100	1,350	1,200	1,100	550	1,400
South Carolina	129	800	650	600	750	700	650	700	170	1,100
Georgia	260	5,000	3,340	3,370	2,100	5,000	3,025	3,720	1,125	5,020
Florida	92	190	160	190	110	180	140	150	80	160
Total	1,412	12,290	8,920	7,635	5,685	9,865	6,910	7,920	2,660	10,080
North-Central States east of the Mississippi River:										
Ohio	241	1,900	3,830	1,100	1,050	1,900	2,000	1,100	680	2,050
Indiana	69	900	1,600	180	400	630	1,000	820	450	1,190
Illinois	67	1,600	2,100	300	450	700	750	2,150	770	1,750
Michigan	340	2,200	2,250	2,200	1,500	1,000	2,450	1,400	700	1,800
Wisconsin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	717	6,600	9,750	3,780	3,400	4,230	6,200	5,470	2,600	6,790
North-Central States west of the Mississippi River:										
Minnesota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iowa	5	190	180	50	180	70	30	300	100	170
Missouri	61	2,250	2,700	1,200	850	2,500	650	4,000	500	2,200
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nebraska	9	80	120	60	30	200	30	180	170	150
Kansas	138	650	700	350	250	650	180	950	30	650
Total	213	3,170	3,700	1,660	1,310	3,420	890	5,430	800	3,170
South-Central States:										
Kentucky	35	2,100	2,500	500	650	1,700	1,570	1,700	550	1,670
Tennessee	78	1,900	1,800	1,100	900	1,450	670	2,400	450	1,700
Alabama	185	2,300	1,850	1,850	1,250	2,600	870	2,100	650	2,150
Mississippi	252	2,300	1,700	1,650	1,150	2,100	900	1,500	600	1,650
Louisiana	154	520	410	450	300	560	480	450	250	510
Texas	1,400	2,900	1,560	2,200	1,600	1,850	2,600	1,900	1,700	2,300
Oklahoma	305	780	710	1,000	700	500	740	1,200	800	830
Arkansas	334	1,600	1,550	2,200	500	2,500	2,200	2,300	2,400	2,700
Total	2,743	14,400	12,080	10,950	7,050	13,260	10,030	13,550	7,400	13,510
Far Western States:										
Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	47	180	250	390	350	580	150	800	40	360
New Mexico	76	130	80	130	90	80	100	120	10	100
Arizona	38	36	39	44	50	23	46	32	30	48
Utah	35	230	220	190	220	250	160	260	90	190
Nevada	3	1	6	5	5	4	3	6	4	2
Idaho	18	100	30	60	60	90	40	60	50	80
Washington	81	190	200	170	210	250	190	200	240	270
Oregon	101	240	180	240	240	290	220	190	250	250
California	8,563	6,750	6,836	8,930	8,150	6,425	7,135	6,810	6,900	9,146
Total	9,012	7,857	7,841	10,159	9,375	7,992	8,044	8,478	7,614	10,446
United States (grand total)	15,433	49,438	46,445	37,831	28,850	41,070	36,634	44,104	22,527	48,146

TABLE I.—*Estimated production of peaches in the United States for the 21-year period, 1899 to 1919, inclusive*—Continued.

Group and State.	1909 (Census).	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
North Atlantic States:											
Maine	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire	23	56	.....	.....	44	3	58	24	46	.....	43
Vermont	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	92	68	97	51	105	31	152	66	144	.....	136
Rhode Island	18	18	22	16	29	14	29	14	.....	.....	.....
Connecticut	270	291	249	128	263	142	335	134	390	.....	186
New York	1,736	1,762	1,536	1,400	1,742	530	2,106	1,238	4,823	700	1,648
New Jersey	441	810	440	638	483	1,140	1,275	689	990	832	818
Pennsylvania	1,024	1,533	1,096	660	922	1,541	2,044	1,069	1,848	720	1,046
Total	3,608	4,538	3,440	2,893	3,588	3,401	5,999	3,234	8,241	2,252	3,877
South Atlantic States:											
Delaware	17	810	249	521	312	608	842	346	324	136	277
Maryland	325	1,080	492	672	480	1,032	1,218	600	1,038	235	731
Virginia	243	1,075	318	1,058	312	911	1,358	660	928	510	928
West Virginia	329	598	230	788	132	886	1,164	520	900	680	928
North Carolina	1,344	1,955	437	2,093	598	1,863	1,955	897	1,978	1,150	713
South Carolina	643	1,204	649	1,020	405	1,166	864	545	1,030	998	466
Georgia	2,555	5,395	2,145	6,175	1,950	5,785	5,330	3,510	3,668	6,092	5,895
Florida	115	178	126	190	112	188	177	119	.....	.....	.....
Total	5,571	12,295	4,646	12,517	4,301	12,439	12,938	7,197	9,866	9,801	9,038
North-Central States east of the Mississippi River:											
Ohio	1,036	1,239	1,735	1,055	931	1,653	2,448	1,350	341	174	728
Indiana	1,174	703	1,147	185	1,276	1,128	648	888	518	.....	150
Illinois	1,223	140	2,310	82	1,998	1,755	874	780	461	.....	700
Michigan	1,687	1,215	2,228	700	1,539	1,247	2,360	2,010	744	85	480
Wisconsin	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	5,121	3,297	7,420	2,022	5,744	5,783	6,330	5,028	2,064	259	2,148
North-Central States west of the Mississippi River:											
Minnesota	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iowa	23	16	240	24	632	472	112	64	.....	.....	3
Missouri	1,485	1,440	2,700	900	4,320	3,780	3,300	1,050	728	.....	828
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nebraska	110	150	36	240	210	192	120	30	.....	.....	.....
Kansas	25	2,432	851	2,016	875	1,760	2,442	150	.....	.....	80
Total	1,544	4,038	3,827	3,180	6,037	6,204	5,974	1,294	728	.....	911
South-Central States:											
Kentucky	1,623	770	770	1,210	1,430	1,980	1,320	880	1,100	110	726
Tennessee	1,579	1,440	360	2,820	1,140	2,640	2,460	900	595	833	978
Alabama	1,417	1,980	840	2,760	1,140	2,310	2,640	1,110	1,281	2,440	1,678
Mississippi	1,157	1,340	460	1,800	1,020	1,440	1,540	400	.....	.....	.....
Louisiana	291	488	190	693	460	356	456	587	.....	.....	.....
Texas	730	3,400	1,204	4,140	2,107	1,196	4,081	2,860	1,728	2,333	2,760
Oklahoma	358	1,460	656	2,121	860	220	2,408	230	798	167	1,007
Arkansas	1,902	2,000	2,346	4,524	3,120	3,180	5,940	759	1,824	217	3,639
Total	9,057	12,878	6,826	20,068	11,277	13,322	20,845	7,717	7,326	6,100	10,788
Far Western States:											
Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	692	346	363	1,035	360	1,025	650	405	1,096	959	902
New Mexico	32	50	86	84	52	106	154	40	124	34	122
Arizona	50	42	51	54	57	60	60	56	.....	.....	.....
Utah	143	195	208	323	284	380	212	84	1,365	1,050	1,500
Nevada	3	2	10	10	8	9	7	1	.....	.....	.....
Idaho	19	60	81	112	92	120	162	25	211	51	222
Washington	84	348	320	445	446	486	566	415	1,747	575	1,899
Oregon	179	317	190	292	311	387	432	276	273	93	514
California	9,267	9,765	7,412	9,308	7,150	10,387	9,768	11,733	15,724	12,959	17,625
Total	10,469	11,125	8,721	11,663	8,760	12,960	12,011	13,035	20,540	15,721	22,784
United States (grand total)	35,470	48,171	34,880	52,343	39,707	54,109	64,097	37,505	48,765	34,133	50,446

There is rarely a season in which the crop is not materially reduced in some of the important peach-producing regions by the occurrence of adverse conditions of some kind, the effect upon the total crop of the country depending obviously upon the importance of the regions affected and the severity of the conditions. On the other hand, occasional seasons occur when conditions are favorable in all or nearly all of the important commercial districts, and the result is an extremely large crop, as in 1915, and correspondingly low prices for much of the fruit.

The principal regions from which peaches were shipped in the fresh state in 1914 are presented on the map shown as figure 3 in De-

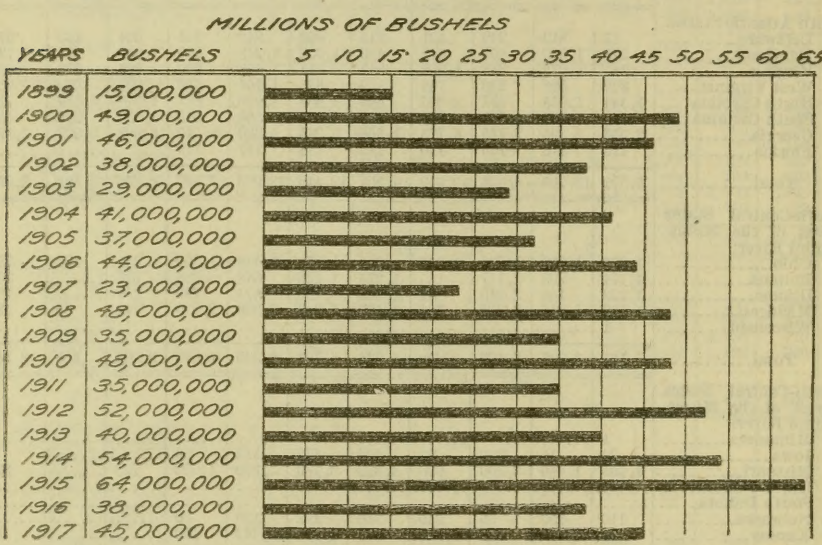

FIG. 4.—Diagram showing the annual farm production of peaches (in bushels) in the United States for the 19-year period from 1899 to 1917, inclusive. The farm production in 1918 was 34,000,000 bushels; in 1919 (September estimates), 50,000,000 bushels. The commercial crop, in distinction from the farm production, for each of the past three years was as follows: In 1917, 29,000,000 bushels; in 1918, 21,000,000 bushels; in 1919 (September estimates), 29,000,000 bushels.

partment Bulletin No. 298, entitled "Peach Supply and Distribution in 1914." On this map the number of carloads from each region and the general period during which the fruit from different regions was being shipped are shown.

The peach season in each State and its relation in point of time to that of other States is clearly shown in figure 5. The height of the peach season in each State named in figure 5, with the exception of Florida and California, is during the Elberta period, that variety comprising a large proportion of the commercial crop in most States. In some regions it is practically the only variety shipped in quantity.

The estimated average annual peach production by States for the 5-year period, 1912 to 1916, inclusive, is shown in figure 6. It will

be noted that the production of "all other States" is 275,000 bushels and that the combined production of the five States named accounts for all except 4,000 bushels of that quantity.

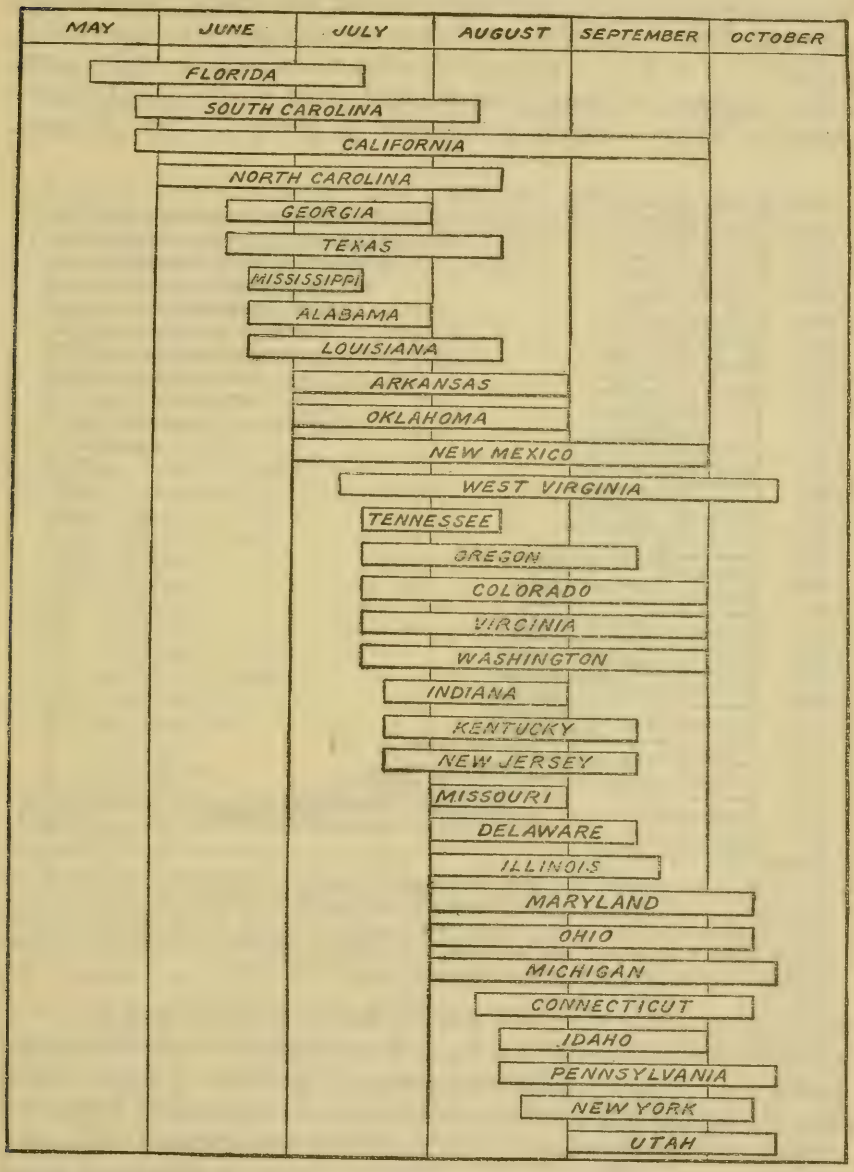

FIG. 5.—Diagram showing the peach-shipping season in each of the principal peach-producing States. (From Department Bulletin 298.)

The estimates on which the averages given in figure 6 are based represent the total crop rather than the commercial portion. This is illustrated in the estimates given for New York, in which there are

large commercial interests, and in Kansas, in which the commercial interests are almost negligible. Assuming that these estimates are accurately proportioned, the large number of small home orchards in Kansas possessed in the aggregate during the 5-year period represented in figure 6 a larger producing capacity than the commercial orchards in New York. Other similar examples might be pointed out.

The shipment of fresh fruit in 1914 from the principal peach-producing States is shown graphically in figure 7. This diagram,

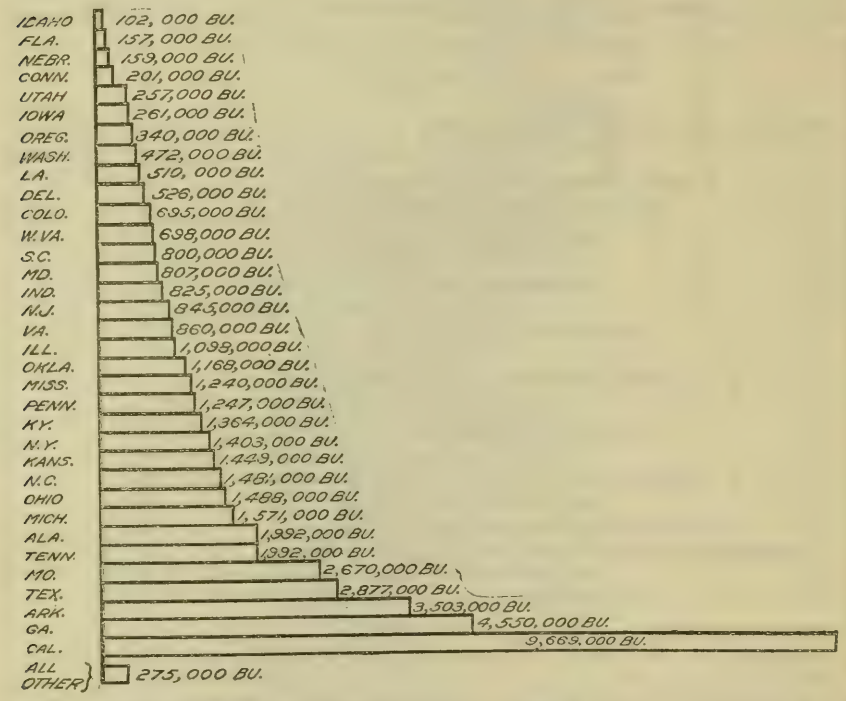

FIG. 6.—Diagram showing the estimated annual average production of peaches in the principal peach-producing States, for the 5-year period from 1912 to 1916, inclusive. The production of five of the States not separately shown in the diagram, but included under "All other," was as follows: New Mexico, 87,000; Massachusetts, 81,000; Arizona, 57,000; New Hampshire, 26,000; Rhode Island, 20,000.

however, does not show the relative commercial interests so far as California is concerned (see Table I and figure 6 for relative total production), since a large proportion of the crop in that State is used for drying and canning, and hence is not reported in fresh-fruit shipments. Furthermore, the shipments shown in figure 7 are for a single season, and the relative position of many of the States might be markedly different in other seasons, depending largely on the occurrence in different regions of climatic and other conditions that are favorable or otherwise to the peach crop.

OUTSTANDING FEATURES OF THE PEACH INDUSTRY.

A few features of the peach industry need special mention in the present connection. From the variety standpoint, the preponderance of the Elberta in most of the producing centers and the selection of special varieties for drying and for canning in California are of interest.

The gradual change from decade to decade in the geography of peach growing may also be noted. In certain regions where 20

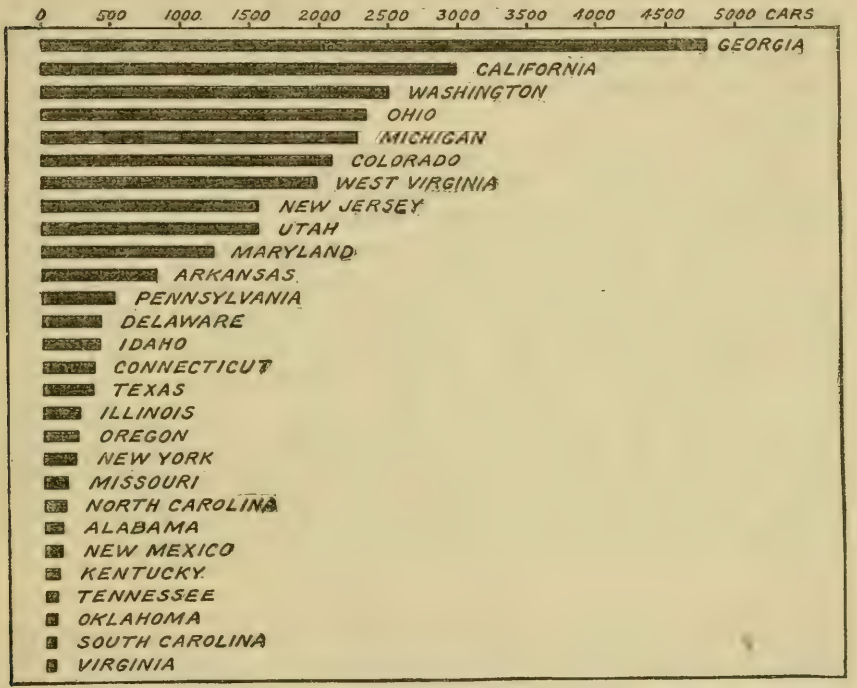

FIG. 7.—Relative bulk of peach shipments in car lots from the principal peach-producing States in 1914. (From Department Bulletin 298.)

years ago there was a commercial orchard on nearly every farm, few peaches, or even none, are grown for shipping at the present time. In one or two other regions large quantities of peaches have been produced in recent years on trees interplanted in apple orchards. As the apple trees developed and required more space the peach trees have been removed. Thus the production of peaches is decreasing in these regions, and in the near future the industry doubtless will disappear. Such changes have characterized the peach industry in a marked degree.

IMPORTANT COMMERCIAL DISTRICTS AND VARIETIES, BY STATES.

NEW ENGLAND STATES.

MAINE.

Distribution.—It is substantially true that peaches are not grown in Maine. This is primarily on account of the low winter temperatures that normally occur. The shortness of the growing season is also a factor.

A very few small orchards have been planted in York County, in the southern part of the State, one at least in Lincoln County, and an occasional tree or two may be found in some parts of Cumberland, Oxford, and possibly other counties. The crop, however, is very uncertain.

Varieties.—There is no generally recognized list of varieties for this part of the country. The Triumph, Greensboro, Carman, Champion, Belle, Crosby, and possibly others have been planted. The New York Agricultural Experiment Station in Circular 15 (revised) names the Crosby, Chili, Elberta, Gold Drop, and Stevens as the five varieties most hardy in wood of those grown in New York. Four of these varieties, with the Triumph substituted for Elberta, are also given as the hardiest in bud. While hardiness in tree and bud is an essential characteristic of a variety for the northern extremes of culture, some of the best experience available indicates that varieties later than the Belle are not likely to mature in the average season, and even varieties ripening with the Belle may sometimes fail to mature because of the shortness of the season.

NEW HAMPSHIRE.

Distribution.—Small commercial peach interests have been developed in a few localities in the southern and southeastern parts of New Hampshire. These interests center largely about Wilton in Hillsborough County, about Derry in the southern part of Rockingham County, and about Stratham and Greenland in the eastern part of that county. A few trees are more or less widely distributed in other sections of the southern part of the State, but mostly in gardens and small home plantings.

Varieties.—The varieties most commonly planted are the Greensboro, Carman, Mountain Rose, Champion, Early Crawford, Foster, Belle, Elberta, Late Crawford, and Crosby.

VERMONT.

Distribution.—Peaches are not planted commercially in Vermont. A few trees may be found in the southeastern part of Windham County about Brattleboro, and an occasional tree is growing in other

parts of that county, as well as about Isle La Motte in Grand Isle County. This location is on an island in Lake Champlain.

Varieties.—No definite suggestions concerning varieties are offered aside from the obvious fact that only the hardiest sorts should be selected,[1] and even these are likely to prove very uncertain as to crop production.

MASSACHUSETTS.

Distribution.—Peaches are somewhat widely distributed in Massachusetts, except perhaps in the western part of the State. The principal areas of commercial production are within the more important apple-growing districts. However, not many peaches are shipped long distances even from the larger orchards, local markets absorbing most of the fruit. The principal localities which admit of definite designation as peach-producing centers are enumerated below.

The largest production is probably in the central part of the State in Worcester County, Warren in the southwestern part of the county, Grafton in the southeastern, and Bolton in the east-central part being community centers of some prominence. The Bolton section is practically a part of the Littleton and Marlboro sections in the western part of Middlesex County, in which peaches are locally important. They are also grown more or less at other points in this county and in Essex County, the northeasternmost county of the State, centering in a general way in the locality of Haverhill and West Newbury. Small orchards of local importance are found at various points in all the other counties in the eastern and southeastern parts of the State. Farther west, Wilbraham in Hampden County and Amherst in Hampshire County, with various other local points, may also be included in the present inventory of small producing centers. In some sections peaches were formerly interplanted in apple orchards, but such peach interests have now largely gone out as the apple trees have developed.

Varieties.—The Greensboro, Carman, Champion, Belle, and Elberta constitute the principal sorts grown.

RHODE ISLAND.

Distribution.—There are no special centers of peach production in Rhode Island, but orchards planted for commercial purposes occur more or less widely throughout the State, the larger orchards occurring in Newport, Providence, Washington, and Bristol Counties, in the order named.

[1] Concerning the relative hardiness of varieties, the New York Agricultural Experiment Station (Circular 15, revised) states that the five varieties of peaches most hardy in wood are the Crosby, Chili, Stevens, Gold Drop, and Elberta. The Crawfords are considered most tender in wood. The five varieties of peaches most hardy in bud are the Crosby, Chili, Triumph, Gold Drop, and Stevens. The five most tender in bud are the Early Crawford, Late Crawford, Chairs, Reeves, and Elberta.

Varieties.—The varieties grown are substantially the same as those planted in Connecticut and Massachusetts.

CONNECTICUT.

Distribution.—Peach growing is more or less widely distributed in most parts of Connecticut, except in Litchfield County, in the extreme northwestern part of the State, where few peaches are grown. The district of particular importance commercially, however, is the central part of the State, in the Connecticut River valley from about the region of Hartford southward and including areas in most parts of New Haven County. Representative towns in this district may be named, as follows: Farmington, Glastonbury, and Southington, in Hartford County; Durham and Middlefield, in Middlesex County; Cheshire, Guilford, Milford, Oxford, and Wallingford, in New Haven County; and Greenwich, Norwalk, and other towns in the southern part of Fairfield County adjacent to the shore of Long Island Sound. In New Haven County the towns of Guilford and Milford, above named, adjoin the Sound. Peaches are also grown more or less in other towns similarly located between Greenwich and Guilford.

Varieties.—Many growers in Connecticut select varieties with a view to marketing peaches during as long a period as possible. The principal sorts planted are the Greensboro, Waddell, Carman, Hiley, Champion, Belle, Early Crawford, Hale (J. H.), Elberta, Frances, Stump, Late Crawford, Fox, Stevens, Iron Mountain, and Salwey.

MIDDLE ATLANTIC STATES.

NEW YORK.

Distribution.—Though New York is one of the large peach-producing States, the districts in which the principal interests are located are more clearly defined than in many other States. By far the largest output is from the Lake Ontario shore district from Oswego County westward to and including Niagara County. This district consists at most points of a narrow strip only a few miles wide, where the influence of the lake so modifies the climatic conditions at certain periods as to make them especially favorable for peach growing. At a few points this favored belt extends into the northern parts of the second tier of counties, as, for instance, in Livingston County, in which some peaches are produced. This is by far the largest commercial peach district in the State. Another district is that immediately surrounding the "finger lakes," in central-western New York, where at various points peaches are grown in limited quantities. A third district of some importance is in the Hudson River valley and comprises locations along the river in

Orange County and in the southern parts of Dutchess and Ulster Counties. Small quantities of peaches are also grown along the Lake Erie shore, in Erie and Chautauqua Counties, but the interests there, as in many other sections where home orchards occur, are relatively unimportant as compared with those along the shore of Lake Ontario.

Varieties.—The Carman, Champion, Belle, Early Crawford, Elberta, Late Crawford, Stevens, and Salwey are the principal varieties grown. A very large proportion of the product consists of the Elberta variety, it being estimated to comprise 80 per cent of the crop in some localities. There is no close second to the Elberta variety in the peach industry of the State.

NEW JERSEY.

Distribution.—Peach growing has long been a prominent commercial enterprise in New Jersey. Orchards are widely distributed in most parts of the State, but the commercial interests are more or less localized about certain centers. The centers of principal production have changed to some extent because of the incursions of peach yellows, the ravages of the San Jose scale, and for other reasons, but at present the larger regions commercially important are the following: Hunterdon County, in the locality of Lebanon and New Germantown; Monmouth County, about Freehold and Middletown; Burlington County, centering about Moorestown and Burlington; Gloucester County, about Glassboro; Atlantic County, in the vicinity of Hammonton; and Cumberland County, with Vineland as a prominent center of production. Except Hunterdon and Monmouth, the counties named above are located in the southern half of the State. While peaches are widely grown outside the centers mentioned, the counties named indicate the general distribution of the larger interests.

Varieties.—The principal varieties planted at present comprise the following: Greensboro, Arp, Carman, Lola, St. John, Hiley, Champion, Belle, Elberta, Frances, Fox, Iron Mountain, and Krummel. While few orchards, and perhaps none, contain all of these varieties, the list is made up of those which are variously planted in the principal peach sections. In an earlier day the Mountain Rose, Early Crawford, and Reeves were leading commercial sorts, but these are of relatively little importance in New Jersey at the present time.

PENNSYLVANIA.

Distribution.—Peaches are widely distributed in most parts of Pennsylvania, and the large number of good-sized industrial towns and cities in that State furnish local markets for much fruit. Though from many orchards the fruit is shipped in car lots to distant mar-

kets, the community interests as a rule are comparatively small, except in a few districts. Probably the most important producing section at present is the southeastern quarter of Franklin County, in which are located several rather large shipping points. This forms a part of the Cumberland Valley—a district which, as a whole, has produced many peaches in the past and doubtless is still the most important peach district in the State. Besides Franklin County, Cumberland, Perry, and Juniata Counties belong in this valley district. Adams and York Counties, located between Franklin and Cumberland Counties and the Susquehanna River, also contain peach orchards of commercial rating; likewise Northampton and Lehigh Counties, in the east-central part of the State. A third district of considerable importance is the lake shore region of Erie County, in the extreme northwestern part of the State.

Varieties.—Carman, Champion, Belle, Ede, Elberta, Fox, Late Crawford, Chairs, Iron Mountain, Geary, Smock, and Salwey are the principal varieties. Few, if any, orchards contain all of these varieties, though the growers, especially those in the Cumberland Valley and adjacent sections, usually aim to plant a considerable number of varieties, with a view to shipping continuously over a long period.

EAST NORTH-CENTRAL STATES.

OHIO.

Distribution.—Peach growing for home use is more or less universal throughout Ohio, but the areas of commercial production are fairly definite. In its commercial aspects, Ottawa County, with its peninsulas and adjacent islands bordering Lake Erie near its western extremity, is far in the lead of any other county; but in this same general lake-shore district there are several other peach-growing counties, including Lucas, Sandusky, Lorain, Lake, and Ashtabula.

Peaches are grown in commercial quantities in some of the counties in the southeastern part of the State, especially along the Ohio River. Lawrence, Meigs, and Athens Counties are mentioned as representative sections of this district. Orchards of some commercial standing also are found in Coshocton and Muskingum Counties, midway between the Ohio River and the geographical center of the State.

Varieties.—The Carman, New Prolific, Elberta, Lemon Free, Smock, and Salwey are the varieties most largely produced.

INDIANA.

Distribution.—Though very generally distributed throughout most of Indiana, the commercial production of peaches is principally in four districts, three of which are in the southern part of the State.

These districts are thus defined: (1) About the junction of the White and Wabash Rivers in Knox and Gibson Counties; (2) in the hilly section in the south-central part of the State, principally in Orange and Lawrence Counties and adjacent parts of the adjoining counties, including Brown, Monroe, Jackson, Washington, and Martin; (3) in most of the counties bordering the Ohio River; and (4) in the northern part of the State bordering Lake Michigan and including parts of Porter and Laporte Counties.

Varieties.—The bulk of the crop consists of the Elberta variety, with the Carman, Champion, and small quantities of a few others as secondary sorts.

ILLINOIS.

Distribution.—Commercial peach growing in Illinois is confined to the southern third of the State, with only such exceptions as are practically negligible. Even in this area the centers of production are rather restricted. In the average season Union County, in the extreme southern part of the State, probably leads in production, but interests of commercial importance are found elsewhere, especially in Johnson, Jackson, Marion, Clay, and Richland Counties. Peach trees are planted in considerable numbers for home use throughout practically the whole State.

Varieties.—The Elberta is roughly estimated by some to comprise as high as 90 per cent of the trees planted in the commercial orchards. A few Carman, Mountain Rose, Ede, Heath, and some others occur. The Hale (J. H.) has been planted in some of the younger orchards.

MICHIGAN.

Distribution.—Peach growing in Michigan is an extensive industry. The area in which it has been developed is more clearly defined than in many other States. It borders Lake Michigan in a narrow belt which includes Berrien County, the southwesternmost county of the State, and extends thence to Leelanau County (which lies between Grand Traverse Bay and the lake) on the north. It is largely through the ameliorating influence of Lake Michigan upon climatic conditions in the areas adjacent to it that the development there of a peach-growing industry has been made possible. As the lake's influence extends inland but a short distance, the peach belt is only a very few miles wide at most points. In the Grand Traverse region, about the bay of that name, peaches are grown to some extent, and the belt extends across Ottawa County into Kent County in the second tier from the lake, though at most points its width covers only a portion of the first tier of counties bordering the lake. Peaches are also produced in some other sections of the State, as, for

instance, in Oakland County, in the southeastern part, and in Huron County, in the east-central part. The latter county forms a peninsula between Saginaw Bay and Lake Huron, and thus is bordered by large bodies of water except on the south. However, the commercial peach interests outside the belt above defined are relatively small.

Varieties.—While a considerable number of varieties are grown, the bulk of the commercial crop is made up of a comparatively few sorts, the principal ones being the following: Engle (*Engle's Mammoth*), Kalamazoo, New Prolific, Elberta, Gold Drop, Smock, and Salwey. In the northern part of the Lake Michigan belt two early sorts, the Triumph and St. John, are grown to a limited extent, while the late varieties, such as the Smock and Salwey, are not so much grown as farther south in the State.

WISCONSIN.

Peaches are not grown in Wisconsin except possibly here and there a tree in the southern part of the State. The winter conditions, especially as to temperature, are too severe for successful peach culture.

WEST NORTH-CENTRAL STATES.

MINNESOTA.

Distribution.—Peach growing from a practical standpoint may be said not to exist in Minnesota. The Thirteenth Census reported only 1,571 trees of bearing age for the entire State. Of these, 334 (the largest number in any one county) were in Hennepin County. This county was also reported to have the largest number of bearing trees of both apples and plums.

Varieties.—No recommendations as to varieties can be made.

IOWA.

Distribution.—Peach growing is relatively unimportant in Iowa. The few peaches that are produced are grown very largely in the southern third of the State—that is, south of the latitude of Des Moines. In this area small plantings are more or less widely distributed. Possibly the conditions in the extreme southeastern counties and in those in the southwest having loess soils are more favorable for peaches than in other parts of the State. Formerly peach trees were interplanted in some of the apple orchards in Fremont County, possibly also in some other sections, but as the apple trees have developed the peach trees have been removed.

Varieties.—The Triumph, Greensboro, Carman, and Elberta occur perhaps as frequently as any varieties. Seedlings are not uncommon in some sections where budded varieties have proved very uncertain.

MISSOURI.

Distribution.—The wide distribution of peach trees throughout Missouri is indicated on the map shown as figure 2. It is also shown by the fact that in 1910, according to the Thirteenth Census, 30 per cent of the counties each contained 50,000 or more trees of bearing age, while about 45 per cent of the counties contained 40,000 or more trees old enough to bear fruit. In most of these counties, however, the trees are in home or small local orchards which have little or no commercial importance. Commercial production is confined very largely to the Ozark region along the lines of the St. Louis & San Francisco and the Kansas City Southern Railroads, the principal commercial peach-producing counties being Oregon, Howell, Greene, Lawrence, and Newton. Interests of limited commercial extent also are found at various points along the Missouri River, but principally in St. Louis County in the vicinity of the city of St. Louis and in Jackson County, in which Kansas City is located.

Varieties.—As in many other large commercial peach-producing sections, the Elberta variety comprises the principal part of the crop in most orchards. Relatively small quantities of the Carman, Mountain Rose, Family Favorite, Champion, Belle, Heath, Salwey, and a few others occur in some orchards.

NORTH DAKOTA.

Practically no peaches are grown in North Dakota.

SOUTH DAKOTA.

No peaches are grown in South Dakota except a very few in the Black Hills district, in the southwestern part of the State. Even there they are a negligible factor. No recommendation as to varieties is practicable.

NEBRASKA.

Distribution.—Peach growing in Nebraska is unimportant commercially. Except in four counties—Cass, Otoe, Nemaha, and Richardson—which border the Missouri River south of the Platte River in the southeastern corner of the State, peaches are practically negligible even in local fruit production. Adverse climatic conditions, particularly low winter temperatures that kill the fruit buds, or even the trees, and frosts that occur during the blossoming period constitute the chief limiting factors.

Varieties.—Little attempt is made to grow other than the hardiest sorts. The Alexander, Triumph, Rivers, Champion, Crosby, and Chili varieties are among those most commonly planted.

KANSAS.

Distribution.—For home and local use peaches are planted very generally in the eastern half of Kansas. Very few are grown in the western part of the State. There are a few commercial orchards, located principally in the extreme northeastern corner of the State, especially in Doniphan County, and at a few points along the Arkansas River in Reno, Sedgwick, Sumner, and Cowley Counties. Isolated orchards of local importance are also found in a few counties in other parts of the State.

Varieties.—While the Elberta probably predominates, a number of the other widely planted varieties are grown, such as the Carman, Minnie (*Alton*), Champion Belle, and Hale (J. H.).

SOUTH ATLANTIC STATES.

DELAWARE.

Distribution.—Great changes have taken place in the status of the peach industry in Delaware during the last 25 or 30 years. That portion of the Chesapeake Peninsula which consists of Delaware and the Eastern Shore counties of Maryland early became a famous peach-producing region; in fact, it was one of the first regions in the country in which peach growing became a great industry.

Peach growing reached its zenith in New Castle County in the late seventies. With the extension southward of peach yellows, the center of the industry in Delaware reached the vicinity of Wyoming, in Kent County, about 1880 to 1885, when probably the production was greater than at any time since. Though considerable change has occurred from decade to decade, the central part of Kent County contains relatively large interests at present. It is probable that they have increased somewhat since the Thirteenth Census was compiled.

The trend of the industry following the period of its greatest development is indicated by the census figures presented in Table II.

TABLE II.—*Peach trees of bearing age in the different counties of Delaware and in the entire State.*

Census of—	Counties.			Entire State.
	New Castle.	Kent.	Sussex.	
1890	588,119	2,335,740	1,597,764	4,521,623
1900	37,689	824,430	1,579,531	2,441,650
1910	58,175	596,069	523,158	1,177,402

Since the late seventies New Castle County, the northernmost county in the State, has not been prominent for peach growing as compared with Kent and Sussex Counties, and, as Table II shows,

there was a decided decrease in the number of bearing trees in Delaware during the decades included in the tabulation, though from 1890 to 1900 the decrease in Sussex County was comparatively small. This decline in the extent of the industry is probably traceable principally to three causes—the destruction of the trees by yellows and by the San Jose scale and the competition of the fruit with that produced in other regions. During the years when peach growing in Delaware was at its height there was comparatively little competition in the industry, since extensive planting of peaches had not yet occurred in many sections.

The areas about Camden and Wyoming in Kent County, about Bridgeville in Sussex County, and about Milford in both these counties are among the more important centers of production at present, but in a general way peaches are grown more or less throughout these two counties in localities within easy hauling distance to shipping stations.

Varieties.—Comparatively few varieties make up the bulk of the crop. These are principally the Carman, Belle, Reeves, Elberta, and Frances, with the Elberta largely predominating.

MARYLAND.

Distribution.—For a century and more, peach growing in Maryland has been a prominent agricultural enterprise. This applies particularly to certain Eastern Shore counties and to Anne Arundel County, on the western shore of Chesapeake Bay. During the late eighties and the nineties large interests were developing in Washington County in the western part of the State. Probably the zenith of peach growing on the Eastern Shore was reached about 1875 to 1885, coincident with its largest extension in Delaware. Subsequent changes have been not unlike those that have occurred in Delaware. These changes are suggested by the census figures presented in Table III.

TABLE III.—*Peach trees of bearing age in certain counties in Maryland.*

Census of—	Counties.			
	Caroline.	Kent.	Queen Anne.	Washington.
1890	670,828	1,758,005	1,287,496	124,105
1900	628,284	484,249	565,640	828,352
1910	175,339	190,594	119,804	260,596

The figures in Table III are self-explanatory. The decline of peach growing shown was due to a combination of factors. The most potent influences were probably the prevalence of yellows and

the competition in the markets with fruit produced in other regions where large interests were developed.

The wide distribution and destructiveness of the San Jose scale during the late nineties and the first part of the following decade also caused a marked decrease in the number of trees. Even at present the industry is undergoing change, as indicated by the fact that since the census of 1910 commercial peach growing in Caroline County has practically ceased. Meanwhile, the industry has become of increasing importance in some of the more southern counties on the Eastern Shore. Of the counties which were early prominent, Kent and Queen Anne, both of which border Chesapeake Bay, continue to produce considerable quantities of fruit. In addition Talbot, Dorchester, Wicomico, and Worcester Counties, all on the Eastern Shore, contain peach interests of considerable importance. Washington County, in the western part of the State, continues as an important factor, and extensive peach interests have been established also in Allegany County.

Varieties.—In western Maryland many of the orchards contain a rather long list of varieties planted with a view to supplying the markets continuously throughout the entire peach season. Such orchards commonly are made up of about the following sorts: Greensboro, Carman, Hiley, Mountain Rose, Champion, Belle, Reeves, Elberta, Fox, Late Crawford, Stevens, Smock, Salwey, and Bilyeu. In the Eastern Shore orchards relatively few peaches that ripen later than the Elberta are grown, though some Late Crawford and Chairs are still produced. The Ray and Hale (J. H.), ripening in the same general season as the Elberta, are found in some orchards. The Carman, Hiley, Champion, and Belle varieties make up the bulk of the fruit that ripens before the Elberta.

VIRGINIA.

Distribution.—Peaches are widely grown for home use throughout nearly all parts of Virginia. Commercial orchards also are found at many different places in certain parts of the Piedmont and Valley regions. The extent of the commercial interests has varied considerably in the past. In recent years the attention of fruit growers in this State has been so largely given to the apple crop that peach growing has become a relatively small factor in the fruit industry. The principal Piedmont counties, from the standpoint of commercial peach enterprises, are Albemarle, Nelson, and Amherst. In the Shenandoah Valley, Frederick and Shenandoah Counties doubtless lead in importance at present, but Rockingham, Augusta, Alleghany, Botetourt, and Roanoke Counties call for mention in this connection.

Varieties.—The varieties principally grown are the widely distributed sorts, the most prominent being the Carman, Hiley, Belle, Early Crawford, Oldmixon Free, Elberta, Late Crawford, Heath, Salwey, and Bilyeu (*Comet*).

WEST VIRGINIA.

Distribution.—While peaches are grown locally more or less in many places throughout West Virginia, the important commercial interests are located chiefly in the counties that make the eastern panhandle region of the State, including Jefferson, Berkeley, Morgan, Hampshire, Mineral, Hardy, and Grant Counties. Of these, Morgan, Hampshire, and Mineral Counties are by far the most important from the standpoint of peach production. In comparison with them the peach interests in Jefferson and Berkeley Counties are rather small. The orchards in these two counties are somewhat widely distributed, however, being located with reference to the railroads that cross them in various directions. It is true, likewise, that in the other counties named the locations of orchards have been determined largely by the transportation facilities, and accordingly they are less widely distributed than in Jefferson and Berkeley Counties. In Morgan and Mineral Counties peach growing is confined to locations within a very few miles of the Potomac River, while in Hampshire, Hardy, and Grant Counties, which are traversed by the south branch of the Baltimore & Ohio Railroad, the orchards occupy sites on the ridges of the mountains which characterize the topography and parallel with which the railroad is located.

Peaches are also a commercial crop of limited proportions at points in the western part of the State along the Ohio River. Cabell and Wood Counties, in which are located, respectively, the cities of Huntington and Parkersburg, are relatively important in that part of the State.

Varieties.—While much the same varieties are grown in West Virginia as are produced in the peach-growing districts to the southward, the relative importance of different varieties is not the same as it is in most other districts. In most of the orchards in the Potomac River valley and adjacent sections the varieties have been selected and planted with a view to furnishing a fairly uniform and continuous supply of fruit throughout a long shipping season. It is important, therefore, from the producer's standpoint to have the fruit ripening in a uniform sequence in order that the crews may be regularly and economically employed. The following varieties are the ones largely grown: Carman, Connet (*Southern Early*), Champion, Hiley, Belle, Oldmixon Free, Elberta, Late Crawford, Stevens, Beers Smock, Heath, Salwey, and Bilyeu.

NORTH CAROLINA.

Distribution.—The principal commercial peach-producing district of North Carolina at present is in what is commonly called the sand-hill region. From the peach-growing standpoint this refers primarily to Moore County, though in adjacent areas in Montgomery County, which borders Moore on the west, considerable quantities are produced. Candor, in the latter county, and Aberdeen, Southern Pines, and Eagle Springs are representative shipping stations in Moore County. The peach industry is being extensively and rapidly increased in this district at present.

A relatively small peach enterprise is located in the northwestern part of the State, centering about Mount Airy, in Surry County. Some tendency to establish peach orchards at some of the higher elevations in the western sections of the State is also reported. Again, in the southeastern part of North Carolina, at points in Duplin, Sampson, Pender, Bladen, and Columbus Counties, rather extensive plantings have been made. Few of these, however, have as yet come into bearing.

Great numbers of seedling peach trees are grown in the mountain regions, foothills, and adjacent areas in western North Carolina and adjoining States. The fruit of these is harvested and the seeds assembled for sale to nurserymen who plant them for the growing of stocks to be used in propagating peach trees. Western North Carolina thus supplies large quantities of the "natural peach pits" used by nurserymen.

Varieties.—The principal varieties are the Mayflower, Victor, Alexander, Yellow Swan, Greensboro, Arp, Carman, Connet, Hiley, Belle, and Elberta, with the last-named variety largely predominating.

SOUTH CAROLINA.

Distribution.—Peach growing for home use is widely distributed in South Carolina, as it is in most Southern States. Commercial interests are located rather widely, but especially in Edgefield County along the Savannah River and in Saluda County. Orchards having a commercial status also are found in Calhoun, Richland, Kershaw, and Lancaster Counties. These counties occupy a strip through the center of the State which extends from the western extremity of the sand-hill region to the eastern extremity of the Piedmont region. In the western part, orchards occur more or less in Greenville, Pickens, and Oconee Counties.

Varieties.—The Mayflower, Carman, Belle, and Elberta varieties comprise the bulk of the crop.

GEORGIA.

Distribution.—According to the Thirteenth Census there were about 10,600,000 peach trees of bearing age in Georgia in 1910, the largest number reported for any one State. In the combined number of trees of both bearing and nonbearing age, Georgia was exceeded by Texas and California.

In yield California is far ahead of Georgia (see fig. 6), but, as noted under California, a large part of the peach crop of that State is used for drying and canning. In shipments of fresh fruit in seasons of a good crop Georgia normally leads all other States.

In general the commercial peach interests of Georgia may be said to be in the central and northern parts of the State. A line extending from Augusta (in the east-central part of the State) in a southwesterly direction toward Albany until it cuts the thirty-second parallel of latitude (which is practically the latitude of Savannah and Americus), and then running directly west to the Georgia-Alabama State line, will divide the State into two sections, of which the northern contains practically all the commercial peach orchards.

The following are the principal counties in which peaches are grown: In the northeastern part of the State, Habersham, White, Banks, Hall, Jackson, Elbert; in the northwestern part, Dade, Walker, Catoosa, Whitefield, Murray, Chattooga, Gordon, Pickens, Floyd, Bartow, Cherokee, Polk, Paulding, Cobb, and Haralson. The above counties are north of the latitude of Atlanta. In the west-central part are Meriwether, Spalding, Pike, Monroe, Harris, Upson, Crawford, Bibb, Marion, Taylor, Macon, Houston, Stewart, and Sumter Counties. In the east-central part are Columbia, McDuffie, Warren, Glascock, Washington, Hancock, Putnam, Jasper, Jones, and Twiggs Counties.

By far the largest center of production is Fort Valley, in Houston County. The next most important centers, on the basis of size, are adjacent areas in Crawford and Macon Counties. Several other counties immediately adjacent to these also contain large interests.

Varieties.—In the central sections the principal sorts are the Mayflower, Greensboro, Dixie Queen, Early Rose, Carman, Waddell, Hiley, Belle, Hale (J. H.), and Elberta. Those in the northern sections are the Carman, Hiley, Belle, and Elberta. Since the very early varieties if grown in the northern sections would compete with the later and more desirable fruit from central Georgia, they are not much planted there. The Elberta is planted in all sections of the State very much more extensively than any other one sort.

FLORIDA.

Distribution.—While peaches are grown more or less generally for home use throughout much of the central highland portion of Florida, the commercial production, measured in carloads, is rather small. The fruit, however, is marketed early in the season, before shipments begin from more northern points. The principal shipping points are in the northeastern quarter of the State, in Putnam, Volusia, and Lake Counties, and in closely adjoining areas in adjacent counties. Representative shipping and production points are Crescent City, Edgar, and McMeekin, in Putnam County; Seville and De Land, in Volusia County; Umatilla, in Lake County; and Lake Geneva, in the southern part of Clay County, which adjoins Putnam on the north. According to the Thirteenth Census Marion and Alachua Counties, adjoining Volusia and Putnam Counties on the west, contain large numbers of bearing trees compared with most other counties in the State, but no important centers of production are designated.

Varieties.—The varieties of commercial importance grown in Florida are few in number. The Jewel is the leading sort, while the Waldo, Angel, and a few others are grown to a limited extent. These all belong to the Peen-to race. They are grown little, if at all, outside of Florida. A few varieties of the South China or Honey race are also grown in Florida, but probably no member of this race equals in importance those of the Peen-to race above named.

EAST SOUTH-CENTRAL STATES.

KENTUCKY.

Distribution.—Doubtless the most important commercial peach district in Kentucky is in the hilly section south and southeast of Louisville, in Jefferson and Bullitt Counties. Shepherdsville and Brooks, in the latter county, are perhaps the largest shipping stations in this district at present. Bedford, in Thimble County, and Bowling Green, in Warren County, are other relatively important centers of production. These localities, except the latter, are in the north-central part of the State, along the Ohio River. Certain other counties bordering that river, such as Campbell, Kenton, and Henderson, produce small quantities of peaches. They are also widely grown in most other parts of the State, but generally not on a commercial scale.

Varieties.—The Elberta is the most prominent variety. The Carman, Belle, Champion, Globe, and a few others are grown in small quantities.

TENNESSEE.

Distribution.—Commercial peach growing in Tennessee is a relatively limited industry, yet many orchards of considerable commercial importance are found in a large number of counties in different

parts of the State. Doubtless the largest general district from which peaches are shipped in quantity is the lower portion of the Cumberland or East Tennessee Valley. This district includes shipping points in several counties, of which the following are among the best known: Cleveland, in Bradley County; Sale Creek, in Hamilton County; Dayton and Spring City, in Rhea County; and Harriman and Kingston, in Roane County. Orchards of some commercial standing are found in some other parts of the East Tennessee Valley, as in Knox, Hamblen, and Washington Counties, but the fruit from these sections is relatively unimportant in quantity. Formerly Tazewell and Cumberland Gap, in Claiborne County, were fairly large points of production. Though of much less importance than heretofore, some shipments are still made from these places.

In the Cumberland Plateau region, which as a whole is not regarded as well adapted to fruit growing, Morgan is the only county that requires mention from the standpoint of peach production.

In the Gulf Coastal Plains region, in the western part of the State, peaches are grown commercially to some extent. Orchards are found in Obion, Madison, Gibson, and possibly other counties.

Varieties.—Early Wheeler (*Red Bird Cling*), Greensboro, Carman, Belle, and Elberta varieties make up the bulk of the crop. Not all these varieties are of equal importance in the different sections, and the two first named are not widely grown, but for early sorts they are of some value in most sections of the State.

ALABAMA.

Distribution.—In Alabama there are several regions where peach growing is of considerable importance. Probably the largest interests are in the southwestern part of the State, in Escambia County, centering about Atmore. In the northwestern part, especially in Walker, Winston, Marion, and Franklin Counties, there are many orchards. Jasper, Haleyville, Winfield, and Phil Campbell are representative shipping points in these counties.

Individual orchards of commercial size, varying from a few acres in extent to 60 acres or more, including one reported to contain 1,100 acres, are more or less widely distributed in other parts of the State, especially in the central, eastern, and northern counties. Jackson, Etowah, Cullman, Jefferson, Clay, Chambers, Lee, and Macon are the counties in which the more important of these somewhat isolated commercial orchards occur.

Varieties.—The Elberta is by far the most important variety throughout Alabama. A few earlier varieties, including the Mayflower, Carman, and Belle (*Belle of Georgia*), are grown in some of the orchards.

MISSISSIPPI.

Distribution.—Though peaches are widely distributed throughout most parts of Mississippi, they are grown largely for home use or local markets, the commercial interests being nearly negligible. A few carloads are usually shipped each season from Jasper and Wayne Counties, in the east south-central part of the State; from Union, Prentiss, Pontotoc, and Lee Counties, in the northeastern part; and possibly in some seasons also from certain other sections. The total commercial shipments in any year include but a small number of carloads.

Varieties.—The Elberta is the principal variety. Other varieties commonly grown in Alabama and Georgia also are grown to a limited extent.

WEST SOUTH-CENTRAL STATES.

ARKANSAS.

Distribution.—By referring to the map (fig. 2) it will be seen that the most extensive plantings occur in the western part of Arkansas, gradually decreasing toward the center, with comparatively few in the eastern part of the State. From a commercial standpoint the largest interests are in Benton, Washington, Carroll, and Searcy Counties, in the northwestern part of the State; in Crawford, Sebastian, Franklin, Johnson, Pope, Yell, Conway, and Faulkner Counties, in the Arkansas River valley between Fort Smith and Little Rock; and in Scott, Polk, Sevier, Howard, Pike, and Hempstead Counties, in the western and southwestern parts. At present the largest concentration of interests is probably in Pike County, which is estimated to have 6,000 acres of Elberta peaches, and in Howard County, with an estimate of 2,000 acres of the same variety.

Varieties.—The Elberta so largely predominates that it practically represents the peach industry throughout the State. North of the Arkansas River a few Carman, Mamie Ross, Belle, and several other varieties are grown, while south of the river the Early Wheeler (*Red Bird Cling*) is planted more or less in addition to some of the other minor varieties named above. In some of the more recent plantings in different parts of the State the Early Elberta and Hale (J. H.) are being tried.

LOUISIANA.

Distribution.—Peach growing occupies an unimportant place in Louisiana. While more or less generally distributed over the State, peaches are produced, with few exceptions, only for home use. At a small number of points in Bossier, Claiborne, Lincoln, and possibly other parishes in the extreme northern part of the State small quan-

tities are grown for shipping. This area is in reality a southern extension of the peach district in southwestern Arkansas.

Varieties.—The principal varieties are the same as those grown in other Southern States of the same latitude, the Elberta leading. In the southern part varieties of the Peen-to race, such as those named under Florida, occur to a limited extent.

OKLAHOMA.

Distribution.—The peach interests in Oklahoma are rather variable. No parts of the State are preeminently adapted to peach growing, yet in favorable seasons peaches succeed well throughout most of the region east of the ninety-eighth meridian, which is approximately in line north and south with Enid, El Reno, and Chickasha. Not many orchards are found west of this line, nor are there interests of much importance in the northern tier of counties. By this elimination that part of the State lying east of the ninety-eighth meridian and south of the border counties on the north may be designated as the region in which most of the commercial peach orchards occur. Within this area commercial orchards are found in most of the counties, though with comparatively small concentration of interests in any one locality. Perhaps Guthrie and its immediate environs in Logan County, and Checotah, in McIntosh County, may be designated as representing some of the more important centers at present. On account of its geographic position Oklahoma is subject to mild winters and warm spells during which the peach buds become tender. Not infrequently temperature conditions occur which, though not unseasonably low, may cause serious injury to the fruit buds after they have started. Because of this, peach growing in Oklahoma is probably less thriving than it otherwise would be. For a similar reason, the status of commercial peach growing has changed materially in many localities in a number of other States.

Varieties.—The Elberta comprises so large a proportion of the trees in commercial orchards that hardly any other sort requires mention. A few Early Wheeler trees are grown in some orchards; also Mayflower, Carman, Mamie Ross, Belle, Early Crawford, Chinese Cling, Heath, and some others.

TEXAS.

Distribution.—In general it may be said that peaches are grown more or less throughout most portions of northern Texas. Limited attention has also been given to peach culture in the southeastern section. The principal commercial interests are located in the northeastern part. A line passing through Sherman, Dallas, Waco, and then directly east to the Sabine River, which is the boundary between

Texas and Louisiana, would include the more important commercial peach-producing counties. Important peach interests exist in a considerable proportion of the counties in the region thus outlined, and many stations from which peaches are shipped are located therein. Tyler, Winona, Athens, Jacksonville, Palestine, Pittsburg, Sulphur Springs, Winnsboro, Mount Vernon, Mount Pleasant, and Marshall are more or less typical centers of production in this area. Orchards of considerable size are also found in other counties, where the intersts are somewhat isolated or represent relatively small community enterprises. Such orchards occur in Colorado, Erath, Eastland, Callahan, Montague, and probably in other counties.

Varieties.—The Elberta variety predominates, but others are considerably planted, such as the Arp, Yellow Swan, Early Wheeler, Carman, Mamie Ross, and Slappey. Certain varieties that have been developed in Limestone County appear to possess characteristics that may prove of great value in northeastern Texas and other regions where the climatic conditions are similar. This group includes varieties designated as Tena, Millard, Anita, Toughina, Lizzie, Frank, Barbara, Katie, and several others which ripen about with the Elberta variety and later.

MOUNTAIN STATES.

MONTANA.

Distribution.—It is substantially true that peaches are not grown in Montana. The Thirteenth Census reported 538 trees of bearing age for the entire State, these occurring on 49 farms; also 3,386 trees not of bearing age on 117 farms. In most sections of the State the trees can not survive the winter conditions, but in the sections about Bigfork, Plains, and Hamilton, in the western part, and possibly in some of the other milder localities a few trees have been planted.

Varieties.—Little information can be give regarding varieties. The Triumph, Champion, Foster, and a few others have been planted, but apparently with very uncertain results.

IDAHO.

Distribution.—Peaches are grown to a limited extent for home use in most sections of Idaho in which a commercial fruit industry has been developed, but the commercial peach production is limited very largely to three regions: (1) The Lewiston district, where a large portion of the fruit is grown on a high bench about 3 miles southeast of the town of Lewiston. (2) The Payette district, which contains a larger acreage of fruit than any other district in the State, comprising the areas along the Payette River from its mouth to Horseshoe Bend, along the Snake River between Payette and Weiser, and up the Weiser River as far as Council. While peaches

have been planted more or less in different parts of this district, it is in the Payette River valley, in the vicinity of Emmett on the Emmett bench that the most extensive plantings are found. (3) The Snake River Canyon district, which extends for a distance of some 125 or 130 miles along the Snake River eastward from the point where it crosses the State line into Oregon. Fruit is planted in coves and other places along the river where conditions are favorable. The North Idaho, Palouse, Blackfoot, and Idaho Falls districts are not well suited to peach growing.

Varieties.—The Early Crawford, Elberta, and Late Crawford are the varieties principally mentioned by Vincent and Downing.[1] The Early Hale is named for the Snake River Canyon district in addition to the Early Crawford and Elberta. The latter variety is far more extensively grown than any other.

Additional varieties grown in a small way in several regions of the State include the Alexander, Triumph, Carman, Champion, and a few others.

WYOMING.

As in the adjacent parts of the States which surround Wyoming, peach growing is made impossible by the severity of the climatic conditions. One report states that peaches in Woming are grown "only as curiosities. The trees have to be laid down and buried in winter."

COLORADO.

Distribution.—The commercial peach districts in Colorado are located in irrigated valleys. The most important district is in the Grand Valley, in Mesa County. Palisades and Clifton are the largest shipping points. Other sections of some importance are the Gunnison Valley, in Delta County, centering about Delta and Austin; the North Fork of the Gunnison, also in Delta County, centering about Paonia and Hotchkiss; and the Uncompahgre Valley, in Montrose County, centering about Montrose. Small interests also are found in the Las Animas Valley, in La Plata County.

East of the Great Divide the only areas of commercial importance are in the Arkansas Valley about Canon City, in the eastern part of Fremont County, and at a few points in close proximity to the Arkansas River in Pueblo and Otero Counties.

Varieties.—In all of these sections the Elberta is by far the most important variety. Very small quantities, relatively, of a few other sorts, such as the Alexander, Carman, Belle, Heath, and Salwey, are produced.

[1] Vincent, C. C., and Downing, G. J. Recommended varieties of fruit for Idaho. Idaho Agr. Exp. Sta. Bull. 83, 14 p., map. 1915.

NEW MEXICO.

Distribution.—Peach growing in New Mexico, like the growing of other kinds of fruit there, is confined almost entirely to irrigated valleys. The principal districts and centers where peach growing is important are the following: The Pecos Valley, especially about Carlsbad, in Eddy County; the Rio Grande Valley, with Las Cruces, in Dona Ana County, the most important locality; Otero County, about Tularosa; and the San Juan County district, in the northwestern corner of the State, centering especially about Farmington. Smaller interests exist also in some of the other fruit-growing areas, such as the Mimbres Valley district in Luna County; the Portales section in Roosevelt County, the latter being a recently developed fruit-growing district; the north-central part of the State, in Colfax County, where small areas irrigated by various mountain streams are devoted to peaches; the San Miguel County district; a small district in northern Santa Fe and in southern Rio Arriba counties; and a similar district in the central part of Taos County.

Varieties.—In the three or four most important districts the Alexander, Hynes (*Hynes Surprise*), Carman, Texas (*Texas King*), Mamie Ross, Champion, Elberta, Late Crawford, Crothers, and Salwey varieties are largely grown. In those of small importance the fruit grown consists mostly of the Elberta and Late Crawford sorts.

The Alexander and Hynes (neither of which appears to be much grown) are late in blossoming, while the Texas, Mamie Ross, and Crothers are medium late; hence, they are less likely to be injured by spring frosts than the earlier blossoming sorts.

ARIZONA.

Distribution.—The report of the Arizona Commission of Agriculture and Horticulture for the year ended June 30, 1915, shows that of the fruit trees and vines of the 10 leading kinds imported into the State for the preceding fiscal year, 44.5 per cent, or 94,752 in number, consisted of peach trees. It was further estimated that 30,500 peach trees grown in local nurseries were planted also during the same year.

While peach growing in Arizona has not attracted wide attention from a commercial standpoint, there are three irrigated valleys in which the interests are of considerable local importance—the Salt River Valley in Maricopa County, the Verde Valley in Yavapai County, and the Gila Valley in Graham County.

Varieties.—The Elberta is largely grown. A few Belle, Salwey, and possibly other sorts are occasionally found. According to McClatchie and Coit,[1] a considerable number of varieties do well in the

[1] McClatchie, A. J., Coit, J. E., and others. Relation of weather to crops and varieties adapted to Arizona conditions. Ariz. Agr. Exp. Sta. Bul. 78, pp. 44–118. 1916.

southern valleys in the State, those definitely specified being the Alexander, Dewey, St. John, Briggs, Belle, Elberta, Late Crawford, Wheatland, Krummel, Sylphide, and Salwey.

UTAH.

Distribution.—In Utah the orchard interests are in valleys which, in general, are located to the westward and along the course of the main range of the Wasatch Mountains, in the north-central part of the State. The principal centers of peach production are as follows: The extreme eastern part of Box Elder County, about Willard, Brigham, Honeyville, Deweyville, Tremonton, and Corinne; Weber County, about Ogden, Roy, and Uinta; Davis County, about Clearfield and Woods Cross; Salt Lake County, about Salt Lake City; and in Utah County, about Provo, Springville, and Payson.

Varieties.—One estimate places the Elberta at 90 per cent of the commercial product of the State. The Early Elberta, Foster, Sellers, and a few others are grown in very limited quantities.

NEVADA.

In most parts of Nevada the climatic conditions are not suited to the culture of peaches, and very little attempt is made to grow them.

PACIFIC STATES.

WASHINGTON.

Distribution.—The peach districts in Washington are coincident with the apple districts, though not all of the latter contain peach interests of importance. The most prominent district with reference to peaches is the Yakima Valley, in which this fruit is grown at numerous points between North Yakima, in Yakima County, and the junction of the Yakima and Columbia Rivers, in Benton County; at Kennewick, located a few miles below the mouth of the Yakima River in Benton County; and at Pasco, directly across the Columbia River, in Franklin County.

The Wenatchee Valley, centering at Wenatchee in Chelan County, is the second most important peach district; the third is the Snake River valley, especially that portion included in the southern part of Whitman County, where at various points peaches are grown on a relatively small commercial basis. This valley is virtually continuous with the Lewiston district in Idaho. In the Walla Walla Valley, as in certain other districts, peach interests have been developed on a sufficiently large scale to produce some fruit for shipping, but the two valleys first mentioned are by far the largest producing districts.

in the State. The Milton-Freewater district in Oregon is a part of the Walla Walla Valley. In all of these valleys most of the peach trees are interplanted in the apple orchards. As the apple trees develop, the peach trees are taken out. As a result, there is at present a more or less rapid and constant decrease in the extent of the peach industry in Washington.

Varieties.—There are no varieties that are in any way characteristic of these districts. The most important sorts are the Triumph, Carman, Champion, Early Elberta, Early Crawford, Elberta, Late Crawford, and Salwey. The Elberta is the principal variety in most localities.

OREGON.

Distribution.—Peaches are grown in Oregon to a considerable extent as fillers interplanted in apple orchards. To this extent, therefore, peach growing in this State is a temporary enterprise. In some sections, however, peach trees have been planted on a somewhat permanent orchard basis. This is the case in The Dalles district in Wasco County, in the Ashland and Merlin districts in the Rogue River Valley, and in the vicinity of Salem in the Willamette Valley. Important valleys where many peaches have been interplanted in apple orchards include such localities as the Milton-Freewater district in Umatilla County, this being a part of the Walla Walla Valley, the Hood River Valley, the Umpqua Valley, and various points in the Willamette Valley in addition to Salem, which is mentioned above.

Varieties.—A large number of different varieties are grown in the various districts, the more important and widely distributed of which include the Alexander, Early Crawford, Early Charlotte, Elberta, Late Crawford, Muir, Phillips, and Salwey. In most instances in the districts where peaches are of special commercial value the problem in selecting varieties is more largely that of securing sorts that ripen at a desired time or are suited to the purpose for which they are to be used than of choosing varieties that will develop well.

CALIFORNIA.

Distribution.—The peach interests of California surpass those of any other State in both quantity and value of the product. According to the Thirteenth Census, there were nearly 1,500,000 more trees not of bearing age in California in 1910 than in any other State, though in number of trees of bearing age Texas and Georgia each surpassed California. Moreover, the industry is highly specialized. While large quantities of fruit are marketed in the fresh state, the planting of varieties intended especially for canning as

well as of varieties particularly adapted for drying is extensively practiced in some districts. The relative importance of peaches for canning, compared with the rest of the country, is indicated by the following figures from the Thirteenth Census. (Table IV.)

TABLE IV.—*Quantity and value of canned peaches in California and in the United States in 1909 and 1914.*

States.	Number of cases canned.		Value.	
	1909	1914	1909	1914
California	1,149,590	2,922,637	$3,013,203	$8,685,831
All other States	317,623	485,269	740,495	899,942
Total for the United States	1,467,213	3,407,906	3,753,698	9,585,773

A comparison of the figures presented in Table IV emphasizes the great importance of the canning industry to the peach growers in California. While the proportion varies more or less from year to year, depending largely upon crop and market conditions in the different States, the actual quantity canned in any year in other parts of the country is always small in comparison with the California product.

Practically the entire commercial output of dried peaches in this country is produced in California. It is estimated that about 90 per cent of the crop, as a rule, is either dried or canned and about 10 per cent shipped in the fresh state.

There are two main districts in which a large proportion of the peaches are produced, viz, the Sacramento and the San Joaquin Valleys. In the latter, the peaches are grown largely for canning and drying. In the Sacramento Valley along the foothills the shipping varieties predominate, but in the valley areas large quantities of fruit both for canning and for drying are produced.

According to the report of the California State Commission of Horticulture[1] Fresno County now has about 35,000 acres of peach trees of bearing age—nearly five times the acreage reported for any other one county.

The principal counties from the standpoint of peach growing in the Sacramento Valley and foothills are Placer, Sacramento, Solano, Sutter Tehama, and Yolo; in the San Joaquin Valley, Fresno, Kings, Merced, San Joaquin, Stanislaus, and Tulare; in other parts of the State, Santa Clara, Los Angeles, Riverside, San Diego, and San Bernardino. Orchards are more or less widely distributed throughout various other districts.

[1] Weldon, G. P. The acreage of fruits, bearing and nonbearing, by counties, in 1915. *In* Mo. Bul. State Com. Hort. [Cal.], v. 5, no. 3, p. 105. 1916.

Varieties.—A large number of varieties are grown in California, but the bulk of the crop consists of comparatively few sorts. For canning, the firm-fleshed yellow clingstone varieties are largely used. The principal cling varieties grown for canning are the Tuskena (*Tuscan*), Hauss, Johnson, Walton, Albright Cling, and Phillips. Of freestone varieties, the Muir and Lovell are canned to some extent, and for drying they are by far the most important. The Elberta is dried in relatively small quantities. Those grown for shipping fresh are the Alexander, St. John, Early Hale, Early Crawford, Foster, Susquehanna, Elberta, McKevitt, McDevitt, Salwey, Levy, and some others.

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